

**Comments of American Electric Power Service Corporation
on
EPA Responses to Certain State Designation Recommendations for the 2010
Sulfur Dioxide National Ambient Air Quality Standard**

Docket ID No. EPA-HQ-OAR-2014-0464

March 31, 2016

INTRODUCTION

American Electric Power Service Corporation (AEPSC) appreciates this opportunity to offer comments on behalf of itself and the operating companies of the American Electric Power System (AEP) that operate fossil fired generation¹ that is subject to this set of proposed initial 1-hour SO₂ Designations.

Our comments focus on specific areas where USEPA rejected the states' recommended designations based on alleged deficiencies in the demonstrations of modeled attainment. Based on the information currently in the record and the additional technical analyses presented herein, USEPA should revise its proposal and accept the states' recommendations that these areas be designated attainment with the 1-hour SO₂ standard.

In addition to these comments, we endorse the comments of the Utility Air Regulatory Group and the Ohio Utility Group, incorporating those comments by reference.

GALLIA COUNTY, OHIO

In the case of Gallia County, Ohio and a portion of Meigs County, Ohio, USEPA has proposed to designate this area as Unclassifiable due to its apparent determination that Ohio EPA's modeling is inadequate due to the use of the LOWWIND3 Beta Option and the numerous inaccuracies identified in various reviews of the independently submitted Sierra Club modeling.

Based on our active participation in the Ohio EPA modeling, we respectfully disagree with USEPA's contention that the use of LOWWIND3 should not be permitted in this case. USEPA's claim that there is no information available demonstrating that AERMOD with the LOWWIND3 provides improved statistical performance on tall stack sources is incorrect on its face. In the Version 15181 Addendum to the AERMOD User's Guide, Appendix F contains an analysis using the USEPA Standard Lovett evaluation database, which is a tall stack case. This case demonstrates that the LOWWIND3 Beta Option coupled with the Beta U* Option in AERMET shows a statistically better performance than does the base AERMOD Model and the other LOWWIND Beta Options present in AERMOD. This contradicts USEPA's statement in the TSD.

While we disagree with USEPA's contention that the LOWWIND3 Option has not been properly tested, we do agree that until such time that the LOWWIND3 Option is fully approved as a default option in AERMOD, that an alternative model demonstration is required. Ohio EPA did perform such a study and submitted it as part of the demonstration package. USEPA does not discuss the appropriateness or validity of this demonstration, instead citing a guidance memorandum issued after the submission of Ohio EPA's modeling demonstration which recommends the use of a specific process to justify the use of alternative model options. A guidance memorandum cannot be used to establish legally binding requirements, and certainly

¹ The operating companies of the American Electric Power System that operate fossil fired generation are AEP Generating Company, AEP Generation Resources, Inc., Appalachian Power Company, Indiana Michigan Power Company, Kentucky Power Company, Public Service Company of Oklahoma, and Southwestern Electric Power Company.

cannot be given retroactive effect. USEPA must consider the study submitted by Ohio EPA on its merits and under the requirements that applied to such demonstrations at the time of its submission, and should approve the use of the LOWWIND3 Beta Option on that basis.

Recognizing that even under reconsideration USEPA still find Ohio EPA's demonstration insufficient, AEPSC has generated the following statistics shown in Table 1 as a supplement to the Ohio EPA demonstration already in the record. These statistics further amplify the conclusion that LOWWIND3 and Beta U* together provides superior model performance in the Gallia and Meigs County area when the modeling results are compared to a monitor that was sited at an area that had historically observed elevated SO₂ readings.

Table 1. Additional statistics not included in the original Ohio EPA Model Performance Study

Statistic	Standard AERMOD Standard AERMET	Standard AERMOD Beta U* AERMET	LOWWIND3 AERMOD Beta U* AERMET
Mean Bias (ppb)	10.33	9.87	7.34
Mean Error (ppb)	10.39	9.92	7.56
Normalized Mean Bias (%)	68.29	65.23	48.50
Normalized Mean Error (%)	68.65	65.59	49.95
Mean Fractional Bias (%)	55.89	54.17	44.51
Mean Fractional Error (%)	56.01	54.30	45.04
Normalized Mean Square Error	0.29	0.27	0.16

In the case of the modeling in the Gallia and Meigs County area, we see from these additional statistics that AERMOD/AERMET with both the Beta U* and LOWWIND3 Beta Options used, performed dramatically better when compared to the base model performance and with the Beta U* alone. This is consistent with the USEPA published information in the AERMOD User Guide Addendum. When this is added to the study that Ohio EPA submitted with the modeling in September 2015, it should allow USEPA to easily determine that the Ohio EPA modeling using AERMOD with the BETA U* and LOWWIND3 Beta Option with actual hourly emissions from the J. M. Gavin Plant and the Kyger Creek Plant for the period 2012 – 2014 is acceptable and demonstrates compliance with the 1-Hour SO₂ Standard. This conclusion supports not only the proposed designation of Unclassifiable, but would support a designation of Attainment.

DESOTO PARISH, LOUISIANA

In the Technical Support Document for the designation of a portion of DeSoto Parish, Louisiana to nonattainment, USEPA uses modeling supplied by the Sierra Club to support this conclusion. Based on AEPSC's review of the Sierra Club modeling, their consultant did not use hourly exit gas temperatures and velocities in their analysis that reflect the actual operating conditions at the Dolet Hills Power Station, they admit that they did not have the necessary information to develop the correct BPIP inputs for the Dolet Hills Power Station, and they did not include emissions from the International Paper Mansfield Plant.

The AEPSC review of the modeling did include the addition of the correct BPIP parameters to the Sierra Club inputs and did not result in any changes in the modeled results attributable to downwash. However, when the hourly inputs for the Dolet Hills Power Station are corrected to reflect actual operating conditions for the period 2012 – 2014 and the emissions from the International Paper Mansfield Plant are added, the modeled results demonstrate attainment when the receptor grid and meteorology developed by the Sierra Club's consultant are used. The Technical Note and supporting modeling files covering this work are attached with these comments.

The corrected modeling results refute the conclusion of the Sierra Club performed modeling that the area surrounding the Dolet Hills Power Station should be designated nonattainment and support the conclusion that the entirety of DeSoto Parish is in modeled attainment with the 1-Hour SO₂ Standard. We recommend that USEPA revise the proposed Nonattainment designation to Attainment based on this new more accurate information.

CONCLUSION

AEPSC appreciates this opportunity to comment on the proposed designations in these two areas. Should you have any questions on these comments, please contact J. C. Hendricks, Director – Air Quality Services at 614-716-1238 (e-mail jchendricks@aep.com) or D. J. Long, Environmental Engineer-Principal at 614-716-1245 (e-mail djlong@aep.com).

APPENDIX
Dolet Hills Power Station Technical Note
Separate Files Containing the Report
and
Modeling Files